

REMARKS

Claims 1 and 2 and new Claims 3-14 remain active in the case. Reconsideration is respectfully requested.

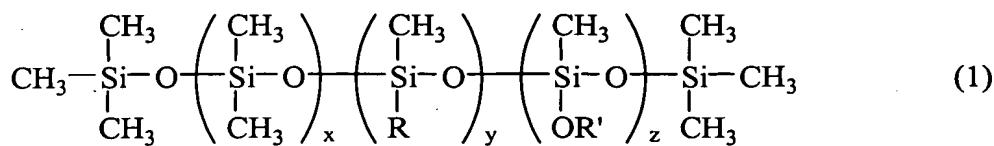
The present invention relates to a cold-curing mortar or cement composition of improved water absorption resistance and flexural strength.

Claim Amendments

Claim 1 has been amended in order to improve upon the language of the claims. New Claims 3-14 are supported by the text at page 6, lines 3-8; page 4, lines 10-29; page 5, lines 5-15; page 7, last full paragraph and page 8, lines 10-22. Accordingly, entry of the amendments and new claims into the record is respectfully requested.

Invention

The discovery of the present invention is a cold-curing mortar or cement composition that, when set after admixture of water with the mortar or cement composition, forms a hardened material of improved flexural strength and water absorption resistance. The cold-curing mortar or concrete composition of the invention comprises calcareous and siliceous materials as predominant components and a silicone oil in an amount of 0.3 to 2.5 % by weight based on the weight of the calcareous material. The silicone oil has formula (1):



wherein R is an alkyl group having 3 to 12 carbon atoms, R' is an alkyl group having 1 to 4 carbon atoms, y is an integer such that the number of alkyl groups R is 5 to 50 mol % of the

total number of substituent groups directly attached to silicon atoms in a molecule, z is an integer of 0 to 5, and the sum of x+y+z ranges from 3 to 30.

Prior Art Rejection, 35 USC 103(a)

Claims 1-2 stand rejected based on 35 USC 103(a) as obvious over JP-09-026811.

This ground of rejection is respectfully traversed.

As applicants have stated on page 2, lines 11-12 of their disclosure, JP 09-026811 describes the addition of silicone oils that contain alkyl and alkoxy groups to cement and mortar compositions for the purpose of increasing the water repellency of the compositions. However, the discovery of the present invention is that when a silicone oil of the formula shown in the claims is incorporated into the mineral components of a cement or mortar formulation in a specified amount ranging from 0.3 to 2.5 wt %, and when the formulation is subsequently mixed with water, the hardened product that results exhibits significantly improved water absorption resistance and improved flexural strength. The distinctive range of the present invention, although partially overlapping the silicone oil content range disclosed in the reference of 0.05 to 3.0 wt %, demonstrates the unique combination of improved flexural strength and water absorption resistance that is not suggested or taught by the reference. In fact, the examples of the present specification demonstrate the improvement of the present invention. Examples 1-4 of the specification describe cement formulations each containing an amount of silicone oil within the claimed range of the invention while Comp. Exs. 2 and 3 describe compositions within the scope of the reference, wherein the amount of silicone oil in Comp Ex. 2 is an amount of 0.2 wt % which is within the range of the reference, but not the present range, and wherein the amount of silicone oil in Comp Ex. 3 of 3.0 wt % is the maximum amount of the range of silicone oil content in the reference, but outside the maximum amount of 2.5 wt % of the present claims. The results shown in Table 1

of the specification indicate while the composition of Comp Ex 2 exhibits good flexural strength, the water absorptivity is very high, while for the formulation of Comp. Ex 3, although the water absorptivity resistance is good, the flexural strengths of formulations begin to decrease. On the other hand, for the four examples of compositions within the scope of the present invention that contain silicone oil amounts of 0.5, 1.0, 2.0 and 2.5 %, respectively, the hardened products all exhibit a combination of good flexural strength and water absorption resistance. The concrete formulations of Table 2 which include four examples within the scope of the present claims and three comparative compositions also show superior compressive strength/water absorptivity resistance results for the examples of the present invention in comparison to the same property results obtained for the comparative compositions. Accordingly, applicants submit that the present invention as claimed is not taught or suggested by the cited and applied reference, and withdrawal of the rejection is respectfully requested.

Oath

As to the matter of the misspelling of “Japan” in the declaration, the Examiner is requested to note that the error has been corrected in the ADS filed with the application where the correct spelling of Japan is given as the country of origin of the priority document. A new oath is not required.

Application No. 10/790,708
Reply to the Office Action dated September 14, 2004

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

Customer Number
22850

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)

NFO/FDV



Frederick D. Vastine, Ph.D.

Registration No. 27,013